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MAYNARD OWEN WILLIAMS

IN RURAL CYPRUS, A DONKEY SERVES AS A THREE-PASSENGER CAR

Twin "rumble seats," and no room for mother, are details of this Cyprus conveyance. On the way home from the village, the children replace the fruit and vegetables which the basket panniers carried to market. Father is driver, and mother trudges along on foot (page 5).

Pampa Stock and Grain Are Argentine Wealth

IN its broad expanse of prairies, its waving fields of wheat and corn, and its herds of purebred livestock, Spanish-speaking Argentina bears a strong resemblance to the United States. An intent of the recently announced five-year plan is to make the *gaucho* country even more like its big North American brother—by increasing its industry.

Even the relative location of the two countries in the Southern and Northern hemispheres is comparable. Placed north of the Equator, Argentina would stretch from Cuba to Hudson Bay. Its width is less than a third of the distance between New York and San Francisco. Long and narrow Argentina nearly fills the tapering southern point of South America, but longer and narrower Chile keeps it from reaching the Pacific coast. Huge Brazil, with three times the area and population, holds Argentina in the number two South American spot.

The Gaucho Is Argentina's Cowboy

Temperatures are reversed in direction and season in the Southern Hemisphere. Northernmost Argentina is tropical jungle; its far southern reaches are cold and barren. But the vast central area stretching inland from Buenos Aires, the capital, is a rich, treeless plain. This is the *pampa*, one of the world's chief "bread and meat" regions. It produces far more than enough food for the Argentine people.

The pampa grasslands, "Argentina's Great Plains," roll westward to the Andes near the Chilean border at an average incline of only about three feet a mile. There graze some 32,000,000 beef cattle, 44,000,000 sheep, and 4,500,000 hogs. Modernization of farming and stock raising has robbed the pampa of much of its color, for the old gaucho (illustration, page 4), hard-riding cowboy of Argentina, has almost disappeared.

The gauchos helped European immigrants settle the "great open spaces," an adventuresome and difficult process which involved battles with marauding Indians just as in the United States. So great was the inrush of Italians, Spaniards, British, Irish, and other Old World peoples late in the 19th century that three-fourths of Argentina's present population of nearly 14,000,000 is estimated to be of European descent. These ties brought close commercial relations with Europe.

Half the Argentinians Live in Cities

Refrigeration has made possible development of meat packing as the country's principal industry. Meat and meat products represent more than half its exports. But Argentina also exports more corn and linseed (from flax) than any other nation, and in 1943 it shipped about 2,200,000 tons of wheat. Wool is another important commodity and in the north cotton is assuming increasing prominence.

Although the pampa is the source of most of the nation's wealth, nearly half the inhabitants are concentrated in cities. Largest of these—in fact, the largest city in the Southern Hemisphere—is Buenos Aires, Argentine economic, industrial, and political center.

ENTERED AS SECOND-CLASS MATTER APRIL 27, 1943, POST OFFICE, WASHINGTON, D. C., UNDER ACT OF MARCH 3, 1879.
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DR. R. J. S. TICKLE

NEAT SCHOONERS TIE UP AT UMANAK'S CLIFF-RIBBED HARBOR ON GREENLAND'S WEST-CENTRAL COAST (page 11)

Greeks and Turks Live on British Cyprus

A MOVEMENT in Cyprus to renounce British rule and unite with Greece recalls the fact that a large proportion of that eastern Mediterranean island's 400,000 people are of Greek descent. Most of the natives (illustration, cover) with the exception of the Turkish-speaking Moslems, who comprise about a fifth of the population, speak a local dialect based on modern Greek.

Cyprus, leased by the British from Turkey from 1878 to 1914, was annexed to the British Empire when Turkey joined the Central Powers in World War I. It became a British colony in 1925 and air and naval bases were built there before World War II.

The role of military outpost was not a new one to Cyprus. In its 35 centuries of recorded history, the island has served armies guarding or invading the Syrian coast, 60 miles east, or the Asia Minor coast, 50 miles north.

The Romans Named Copper from the Island

Mountainous Cyprus is less than half the size of New Jersey. Its 3,572-square-mile area places it third in size on the list of Mediterranean islands—after Sicily and Sardinia. The climate is mild and equable, ranging from about 57 degrees Fahrenheit to 78, and with little snow except in the highest mountains. Mt. Troodos—tallest peak—rises 6,403 feet in the range that lines the southern coast of the island.

Crowded Cyprus is a patchwork of villages. The islanders tend vineyards, raise grain and fruit, and mine iron, asbestos, and copper. Salt works on the south coast and sponge fisheries contribute exports.

The copper of Cyprus was important in the Bronze Age 4,000 years ago. When the Romans arrived to make the island one of their provinces, they named the metal they found after Cyprus—*cuprum*. From this came the modern symbol, cu.

Nicosia, the island's capital and largest city, is a picturesque walled town set in a treeless plain about 12 miles inland from the north coast town of Kyrenia (illustration, page 6). Through it runs the 70-mile rail line which crosses the central plain—the Mesaoria—from Famagusta, east coast port, to Lefka, near Morphou Bay. The old section, enclosed by walls the Roman Emperor Constantine built in the 4th century A.D., reflects the city's varied past and present racial and religious mixture.

Many Nations Have Ruled the Island

Ancient houses of sun-dried bricks are found amid remains of medieval stone structures whose massive doors and gateways are decorated with the arms of the Lusignan kings and Venetian nobles. The old Gothic cathedral of St. Sophia and the Church of St. Catherine have been made into mosques, symbol of three centuries of Turkish rule.

Cyprus has been dominated by a long list of conquerors. Egyptians, Phoenicians, Greeks, Persians, Romans, and Arabs have ruled in turn. Richard the Lion Heart, England's Crusader king, took the island in 1191. There he married Berengaria, daughter of the King of Navarre.

In making a fellow crusader, Guy de Lusignan, ruler of Cyprus,

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In this cosmopolitan, modern-appearing city and its environs, studded with parks and plazas, live more than 3,500,000 people. Situated on the estuary of the Rio de la Plata, Buenos Aires dominates not only Atlantic shipping but traffic on the Paraná and Uruguay rivers. It also is the hub of Argentina's extensive rail lines.

Nearly all Argentina's industry is in the Buenos Aires area. The newly announced five-year plan would expand existing plants and factories and distribute others over the country. A goal of the plan is to decrease Argentina's reliance on more industrialized countries for iron and steel, machinery, fabrics, cotton, fuel, and building materials.

Argentine history closely parallels that of the United States. In 1516 Spanish explorers discovered the country and 35 years later the first settlement was made. The City of Good Airs (Buenos Aires) was founded in 1580. Revolt from Spain came in 1810. After an intermittent six-year war. a colonial congress declared the Argentine provinces free.

NOTE: Argentina is shown on the National Geographic Society's Map of South America. A price list of maps may be obtained from the Society's headquarters, Washington 6, D. C.

For additional information, see "Buenos Aires: Queen of the River of Silver," in the *National Geographic Magazine* for November, 1939*; "Life on the Argentine Pampa," October, 1933; and "Buenos Aires to Washington by Horse," February, 1929. *(Issues marked by an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00.)*

See also, in the GEOGRAPHIC SCHOOL BULLETINS, March 27, 1944, "Argentina, Meat and Grain Land, Yields Metals Too"; and "Rich, Productive Argentina Last to Break Axis Ties," February 14, 1944.

H. G. OLDS

ARGENTINA'S COWBOYS MAKE "BOLEADORAS," OR "BOLAS," OUT OF COWHIDE STRIPS

Though of differing dress, speech, and temperament, the cowhands of the United States West and the gauchos of the pampa are cut from the same cloth. The bola, used instead of a lasso, has three lead-weighted ends which wrap around the legs or neck of an animal when thrown by the gaucho.

Mesa Verde, Where Cliff Dwellers Flourished

AT Mesa Verde, apartment-dwelling Indians built up a remarkable Stone Age design for living and then completely abandoned their cliffside communal houses—long before Columbus discovered America. Mesa Verde National Park, in southwest Colorado, preserves the cave-enclosed villages deserted about A.D. 1300, after two centuries of occupancy.

It was no pre-Columbian housing shortage that drove the Indians from their cliff caves; it was their search for water, the magic substance that makes life possible in the semiarid Southwest. A 24-year drought beginning in 1276 forced the 300 or 400 village groups, one by one, to abandon their pueblos. Today's Pueblo Indians, scattered in villages over New Mexico and Arizona, may be descended from the Mesa Verdans.

Cliff Palace Was a Sizable Village of 400 Indians

This distinctive national park is one of the easiest places in the world for the visitor—whether versed in archeology or not—to visualize prehistoric life. Protected in their cliff caves, the many-storied and terraced villages stand almost exactly as they were built. It is a simple matter to spot the living rooms, storage rooms, and ceremonial chambers. Walking across the courtyard, the only open space in the crowded community, one can almost imagine swarthy women pounding corn into flour and children playing in the dust. Visitors often wonder how Pueblo mothers taught their offspring not to play too close to the cliff edge.

The largest cliff-dwelling unit is called Cliff Palace (illustration, page 8). It stands in a cave 200 feet above the Canyon floor, and has only one entrance. The cave, 300 feet long and 100 feet deep, houses a pueblo (Spanish for village) of more than 200 living rooms. As many as 400 persons are believed to have lived there. As population increased, more and more rooms were built on top of those already standing, until there were eight floor levels.

Four other spectacular cliff-dwelling ruins—Spruce Tree House, Balcony House, Square Tower House, and Little Long House—are easily reached from park headquarters. Hundreds more can be seen only by hiking or riding to their distant sites.

National Geographic Expeditions Solved Riddle of the Tree Rings

Indians built in such crowded, inaccessible spots for safety from enemies and protection from the elements. The cliff dwellers were farmers. They stored their winter corn in small rooms behind the living chambers. Surrounding Mesa Verde were marauding nomadic Indians who watched the Pueblos labor all summer and autumn over the corn crop, then swooped down to steal it from them. Hence the easily defended sites chosen by the sedentary Indians.

The first cliff dwelling on Mesa Verde was discovered by two cowboys in 1888. Until 1929 it was not known how old the cliff ruins were. In that year was published (see note) the result of the National Geographic Society's Tree-Ring expeditions. By comparing the annual growth rings in living trees with the rings in timber recently cut, and by continu-

Richard established a dynasty which ruled the island for 300 years. Ruins of magnificent churches, abbeys, and castles stand as monuments to the fabulous era which ended when the Republic of Venice took over. Toward the end of the 16th century the Turks wrested Cyprus from the Venetians, and remained masters of the island until they leased it to Britain.

Famagusta, on the eastern coast facing Syria, is the best port on the island. Nearly all of its 7,000 inhabitants are Moslems. In the suburbs the residents are chiefly Christians.

It was at Famagusta that Shakespeare laid several scenes of *Othello*. The ancient walled city has played a real-life role in many history-making events in the struggles for power in the eastern Mediterranean.

While Cyprus in general has no good harbors for large vessels, Famagusta's port offers shelter for fairly large ships. Before the war, the British developed its natural facilities and, with the addition of man-made ones, constructed a naval base.

NOTE: Cyprus is shown on the Society's Map of Bible Lands and the Cradle of Western Civilization, which is a supplement to the December, 1946, issue of the *Magazine*.

For further information, see "The Road of the Crusaders," in the *National Geographic Magazine* for December, 1933; and "Unspoiled Cyprus," July, 1928.

MAYNARD OWEN WILLIAMS

CYPRUS BREAD COMES TO ITS CUSTOMERS ABOARD A BOARD

In this village near Kyrenia, the primitive customs, so characteristic of the ancient Mediterranean island, include marketing round, chunky loaves of bread from a long wooden plank. This portable tray, although heavier than the basket usually used to transport food in Cyprus, makes a handy counter and holds a good supply of bread. Stone buildings in the background are typical structures on this island which centuries ago supplied the Egyptians with timber from thousands of acres of forests, but which now, except in the mountains, is practically treeless. In many districts, modern improvements are almost unknown, and farmers turn their land with a wooden plow, harvest olives by beating the trees with sticks to knock them to the ground, and extract the oil with a wooden hand press.

Ancient Rome Gave Orient Its Abacus

THE abacus, that timeless counting device whose wire-strung wooden beads on a tray make it look like a child's toy, recently vanquished in fair fight an upstart challenger—an $800, 20th-century electric calculating machine.

The contest was held in a Tokyo theater before 2,500 American servicemen. Rooting for their countryman who expertly operated the costly modern instrument, they watched in surprise as his Japanese adversary dexterously flicked the beads on his $1 abacus and produced the correct answers first.

In the Orient, Abacus Users Are Everywhere

The abacus won in addition, subtraction, division, and composite problems. The machine proved better in multiplication. In previous contests an abacus in the hands of an English expert added faster than a machine operated by Red Cross girls in Yokohama.

In the East, the abacus is relied upon so completely that many Orientals never learn to "figure in their heads." Instead, they resort to their curious beads for such simple sums as four plus eight. Merchant, bookkeeper, banker, and money-changer use the abacus constantly. In the United States, an occasional Chinese laundryman figures bills on the ancient tray.

Though used today almost exclusively in the Orient, the abacus is an invention of the Western World. The principle is possibly of Egyptian origin, but the abacus was largely developed by pre-Christian Greeks and Romans. Abacus is the Latin form of the Greek word by which the counting table originally was known.

Pebbles were first used on the counting tables, which were lined in parallel columns for units, tens, hundreds, thousands, and so on. The pebbles were moved up and down, just as abacus beads are pushed on their metal wires or rods.

From the Latin word for the pebbles thus used come the English words "calculate" and "calculus."

Introduced to China in the 12th Century

This ancient abacus progressed to a board containing parallel grooves, with longer slots below and shorter ones above. In the grooves were inserted small wood knobs for counters.

The ancients used the instrument for all arithmetic problems, though multiplication and division complicated its operation, and answers to fraction problems are thought to have been but approximations.

The abacus is believed to have been introduced into China in the 12th century. Japan did not adopt the mathematical wonder until the 16th century, when it was borrowed from China. The Japanese call their version the *soroban* (illustration, page 10).

Chinese and Japanese work the abacus from right to left, and read it from left to right. There are ten rows of counters divided unequally with five beads below and two above. The five lower bobbins on each row

ing this comparison in overlapping samples of timber found in various ruins, scientists pushed the dawn of Southwest history back to eight centuries before Columbus.

Tree rings, the Rosetta Stone of American archeology, proved as reliable as human records. Assuming that the year of cutting the timber was the year it was used in construction, it was found, for instance, that Mug House, one of the oldest dwellings in Mesa Verde, was built in the year of the Norman conquest of England—1066.

Most Southwest mesas (Spanish for tables) are bare rock. Mesa Verde, covered with vegetation, presents a distinctive green (Spanish *verde*) appearance. The entrance road from U. S. 160 climbs up the abrupt north face of the mesa and soon reaches an altitude of 8,572 feet. From here the tableland slopes gradually toward the south. Innumerable canyons shred the mesa. In their walls the cliff dwellings cling.

The park is open from May 15 to October 15. Roads leading to it traverse some of the most scenic sections of the Rockies and the Southwest. The park itself is a place of beauty, not merely an outdoor museum. The lodge and an automobile camp provide accommodations.

NOTE: Mesa Verde National Park is shown on the Society's Map of Southwestern United States.

See also, "The Secret of the Southwest Solved by Talkative Tree Rings," in the *National Geographic Magazine* for December, 1929; and "A Mind's-Eye Map of America," June, 1920.

G. C. GRANT, COURTESY NATIONAL PARK SERVICE

CROWDED CLIFF PALACE HAS 23 "KIVAS"—CIRCULAR CEREMONIAL AND CLUB ROOMS FOR MEN

Greenland Air Bases Stir Wide Interest

OBJECT of widespread discussion, the United States air bases on Greenland are of strategic importance because they lie athwart great-circle air routes between the United States and northern Europe and Asia. The protection of this Danish colony, largest island and most northerly land in the world, was taken over by the United States in April, 1941, one year after Germany invaded Denmark.

Several American-built wartime weather stations have been turned over to Danish personnel. But last summer a United States delegation reportedly went to Copenhagen to ask for permanent leases on airfields considered necessary for the defense of North America and useful as way stations for commercial airlines. Official Danish reaction has not been published.

Airfields Placed at Edge of Icecap

Large enough to cover nearly all the United States east of the Mississippi, Greenland groans under a ponderous icecap that leaves only a slim margin of land sticking out around the edges. On this margin, between "Greenland's icy mountains" and the sea, lies a trio of airfields of interest in any American-Danish discussion—one near Julianehaab, close to the southern tip of the island; one just north of the Arctic Circle on the west coast; and one near Angmagssalik (illustration, page 12) on the east coast opposite Iceland.

Though the disjointed and irregular ice-free margin seems small compared to the icecap, it equals three Indianas in size. Little grows on this land. Most Greenland trees are a few feet high with wrist-thick trunks. Scrub willow, alder, and birch are most prevalent. Grasses, mosses, and lichens also grow readily. Grains do not thrive, but small gardens produce vegetables and in fjord valleys of south Greenland large sweet blueberries grow wild.

Mines at Ivigtut, near the southern tip, are the world's only natural source of cryolite, used in making aluminum.

The 20,000 native Eskimos live mostly along the southwestern coast (illustration, page 2). They fish and hunt and live largely on meat. They are wards of the Danish government. Some 500 Danes live among them and look after their welfare.

Eric the Red Colonized Greenland in 981

Greenland, like the Aleutians, is a weather cauldron. Europe's weather is influenced by Greenland's moods. Germans and Allies alike knew this and established weather-reporting stations on the Arctic island. The United States Coast Guard raided several German posts, but others managed to send their reports to Germany almost to the end of the war.

Eric the Red, a Norseman exiled from Iceland, sailed west in 981 and established a colony on Greenland. He gave the frigid land its misleading name to attract settlers. Norse colonies grew to 3,000 or more persons at their peak. Once a year a ship from Norway brought supplies.

After about 1400 the supply boats stopped coming so regularly. Then three centuries passed with hardly any European contact. When Hans Egede, Danish missionary, landed in 1721, he found not a single trace of

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count as ones when moved up, the two uppers count as fives when moved down. Each column represents a power of ten, and the operator can "borrow one" or "carry two" and can express totals in billions.

ERIC M. SANFORD

FLICKING ABACUS BEADS UP AND DOWN, A JAPANESE GIRL FIGURES THE PRICE OF THE POTATOES

Called a "soroban," Japan's counting device is longer and narrower than the usual abacus, but it calculates in the same manner (see text immediately above picture). Speed of computation on this instrument is limited only by the dexterity of the user.

BRING ON THE HOT DOGS, THERE'S PLENTY OF MUSTARD

American hot dogs take a lot of mustard—so much that it is now the country's number one spice.

Before the war, pepper outranked mustard seed in poundage among spices flavoring America's diet. Spice experts say it will be 1950 before the supply of pepper from the Netherlands Indies, its almost exclusive source, can approach its former level.

At the war's beginning, farmers of the western states started filling the pepper gap with mustard. In 1941 they produced too much mustard seed—73,000,000 pounds. By 1945 production tapered to 27,000,000 pounds—still two and a half times the prewar average. Montana, California, Oregon, Washington, and North Dakota are the leading producers. Consumers of hot dogs "with the mustard on top" are easily most indebted to Montana.

American mustard, replacing pepper in meat preservation, spicing fighting men's messes and civilian rations, supplying urgently needed edible oil, and easing chest colds, did its bit to help win the war.

the medieval Norse settlers, who by that time had died out or become assimilated with the Eskimos. Egede stayed on in Greenland and laid the foundations of its modern life.

One theory on the formation of the icecap says that Greenland was originally shaped like a pie crust, with a rim of mountains around a low central plain. Winter after winter, non-melting snow gradually filled the pie crust to overflowing. Now each year's snow, pressing down on the icecap, forces chunks around the edges to break off into the sea, forming icebergs.

NOTE: Greenland is shown on the Society's Map of North America.

For additional information, see "Americans Stand Guard in Greenland" and "Uncle Sam's Icebox Outposts" (19 color photographs) in the *National Geographic Magazine* for October, 1946; "Servicing Arctic Bases," May, 1946; "Greenland Turns to America," September, 1942*; "Desolate Greenland, Now an American Outpost," September, 1941; and "Greenland from 1898 to Now," July, 1940*.

F. VOGEL

WOMEN AND CHILDREN, IN EMBLAZONED TROUSERS, LOOK TO SEA FROM A GREENLAND ROCK

They are watching their menfolk paddle out to a ship that has just entered the harbor of Angmagssalik, only sizable Eskimo village on the Arctic island's east coast. Though it is summer, they still are snugly dressed. This type of apparel is seen in many Rockwell Kent drawings of Greenland subjects.